Claims

1. A semiconductor element comprising:

a structure comprising at least one semiconductor material, said structure having a first major surface, a second major surface and an edge region, said first major surface being opposite said second major surface, and said edge region comprising at least one surface between said first major surface and said second major surface,

said structure comprising at least one zone of reduced oxygen concentration, said zone of reduced oxygen concentration having an interstitial oxygen concentration of not greater than 3×10^{17} oxygen atoms/cm^3, said zone of reduced oxygen concentration including said first major surface and all points in said structure which are within 75 microns of said first major surface.

2. A semiconductor element as recited in claim 1, wherein said zone of reduced oxygen concentration includes said first major surface and all points in said structure which are within 100 microns of said first major surface.

3. A semiconductor element as recited in claim 1, wherein said zone of reduced oxygen concentration includes said first major surface and all points in said structure which are within 125 microns of said first major surface.

4. A semiconductor element as recited in claim 1, wherein said zone of reduced oxygen concentration includes said first major surface and all points in said structure which are within 150 microns of said first major surface.

5. A semiconductor element as recited in claim 1, wherein said zone of reduced oxygen concentration includes said first major surface and all points in said structure which are within 175 microns of said first major surface.

6. A semiconductor element as recited in claim 1, wherein said zone of reduced oxygen concentration includes said first major surface and all points in said structure which are within 200 microns of said first major surface.

7. A semiconductor element as recited in claim 1, wherein said zone of reduced oxygen concentration includes at least one member selected from the group consisting of at least 10^{15} or more atoms/cm^3 of nitrogen, at least 10^{17} or more atoms/cm^3 of carbon, and one or more transition metal elements in a total amount of at least 10^{16} or more atoms/cm^3.

8. A semiconductor element as recited in claim 1, wherein said semiconductor element has at least one hole extending from said first major surface to said second major surface.

9. A semiconductor element as recited in claim 1, wherein at least one of said major surfaces of said semiconductor element has at least one ridge.

10. A semiconductor element as recited in claim 9, wherein said at least one ridge substantially extends around a perimeter of said major surface of said semiconductor element.

11. A semiconductor element as recited in claim 1, wherein at least one of said major surfaces of said semiconductor element has at least one valley.

12. A semiconductor element as recited in claim 1, wherein a substantial perimeter of at least one of said major surfaces of said semiconductor element is thicker than adjacent regions of said semiconductor element.

13. A semiconductor element as recited in claim 1, wherein said semiconductor element has a thickness defined from said first major surface to said second major surface of about 600 micrometers or less.

14. A semiconductor element as recited in claim 1, wherein at least part of said edge region is rounded.

15. A semiconductor element as recited in claim 1, wherein at least part of said edge region is not perpendicular to said first and second major surfaces.

16. A semiconductor element as recited in claim 1, wherein an area of said first major surface is not greater than about 1000 cm^2.

17. A photovoltaic cell comprising at least one semiconductor element as recited in any one of claims 1-16.

18. A photovoltaic cell comprising at least one semiconductor element as recited in any one of claims 1-16, wherein said photovoltaic cell is a metal wrap through solar cell.